

BREMO POWER STATION

Item #7: Status of planned repair projects, including east ash pond embankment improvements.

Resolution: Golder Associates performed a geotechnical investigation and stability analysis of the east ash pond embankment in 2014. In its current configuration, the downstream slope of the embankment does not meet minimum factor of safety criteria ($F.S._{Min.} = 1.5$). The current factor of safety is 1.4. Golder Associates has been contracted to prepare design and construction documents for the closure of the east ash pond. Their Scope of Work includes the requirement to design improvements to the embankment that will result in it meeting the minimum factor of safety required by the Virginia DCR Impounding Structure Regulations. The Engineer of Record (Golder) will be required to certify that the closure project (including the embankment improvements) has been constructed in accordance with the design documents.

Item #8: Impact evaluation of north ash pond hazard on the east pond

Resolution: Golder Associates performed an inundation study for the north ash pond dam in conjunction with the development of its Emergency Action Plan (EAP) in August 2012. The analyses routed flows downstream of the assumed dam breach across the top of the east ash pond during a “sunny day” dam failure and a dam failure during a ½ Probable Maximum Flood (1/2 PMF) storm event. The calculated flow depths and velocities are relatively low and are expected to occur for a short period of time (up to 65 minutes). Because the flow area is wide and the velocities are low, significant erosion of the flooded east ash pond and dike is not expected to occur.

Golder Associates has been contracted to prepare design and construction documents for closure of both ash ponds. Their Scope of Work includes provisions to modify the ponds such that they will no longer impound water and both will be capped. Subsequent surface storm water run-off will be collected in ditches and channels designed with appropriate erosion control surfaces.

Item #9: Evaluation of east ash pond slope stability issues

Resolution: See answer to Item 7.

Item #10: Evaluation of embankment location within the 100-year floodplain for each of the three impoundments

Resolution: The east and west ash pond embankments are entirely within the 100 year floodplain of the James River as identified on the FEMA Flood Insurance Map. The 100-year flood elevation reaches the toe of the existing north ash pond embankment. Golder Associates has been contracted to prepare design and construction documents for the closure of all three ash ponds. Their Scope of Work includes the requirement to design the closures such that the embankments will remain stable during such a flooding event. The Engineer of Record (Golder) will be required to certify that the closure project has been constructed in accordance with the design documents.

Item #12: Evaluation of seepage evidenced in east pond embankment

Resolution: Golder Associates has been contracted to prepare design and construction documents for the closure of the east ash pond. Their Scope of Work includes the requirement to design improvements to the embankment that will result in it meeting the minimum factor of safety required by the Virginia DCR Impounding Structure Regulations. The analyses performed by Golder will consider the presence of any seepage. In addition, it is envisioned that after the pond is closed (capped and covered), the observed seepage will dissipate and/or stop over time as there will be no recharge from rainfall infiltration. The Engineer of Record (Golder) will be required to certify that the closure project (including any embankment improvements) has been constructed in accordance with the design documents.

CHESAPEAKE ENERGY CENTER

Item #13: Status of planned repair projects

Resolution: Dominion has performed geotechnical studies of the perimeter embankments surrounding the Columbia Gas property, the ash landfill, and the bottom ash and sedimentation pond. Historical shoreline erosion has resulted in embankment stability factors of safety to be less than required by standard engineering practice. Three areas (Priority Areas 1, 2 & 3) have been identified that require shoreline/embankment improvements. Design documents for these improvements have been prepared by Schnabel Engineering. Shoreline improvements were implemented in late 2014 for Priority Area 1 (Columbia Gas property east embankment along Elizabeth River). Shoreline Improvements will be implemented in 2015 for Priority Area 2 (west embankment along cooling water discharge channel) and Priority Area 3 (east embankment along Elizabeth River between Columbia Gas property and bottom ash pond). The Engineer of Record (Schnabel) will be required to certify that the shoreline and embankment improvements have been constructed in accordance with the design documents.

Item #15: Status of slope remediation projects for the bottom ash and sedimentation pond impoundment

Resolution: After the TVA Kingston ash facility failure in late 2008, Dominion contracted Schnabel Engineering to perform a geotechnical investigation of the east, west and south embankments of the bottom ash and sedimentation pond. It was determined that the east and west embankments did not meet acceptable factor of safety criteria for stability. In 2010, Schnabel was contracted to prepare design and construction documents to improve these dikes. Also in 2010, these designs were implemented by constructing sheet pile retaining walls along the east embankment and a riprap buttress along the west embankment. These improvements resulted in both dikes meeting the minimum factor of safety required by the Virginia DCR Impounding Structure Regulations. The Engineer of Record (Schnabel) was on site during construction of these improvements and certified that the work was completed in accordance with the design documents.

Item #18: Evaluation of presence of soft foundation soil layer beneath landfill

Resolution: GAI Consultants performed the geotechnical investigation to “convert” a portion of the historical ash pond at CEC into a dry ash landfill. GAI also produced the design and construction documents to prepare the

site for the construction of the landfill on top of the previously ponded ash. The ash was dewatered using wick drains and provisions were made to drain any additional water from beneath as it was “squeezed” out of the ash due to future consolidation. A geo-membrane liner was placed on top of the prepared surface to separate the landfill materials from the formerly ponded ash. GAI performed stability analyses for the final configuration of the landfill to insure a stable facility whose slopes met acceptable factor of safety criteria, taking into account the subsurface profile and including any soft foundation layers. The landfill is currently close to undergoing final closure and ash is no longer being placed. It has performed satisfactorily for 30 years without any stability issues.

Item #19: Evaluation of Unknown geo-synthetic liner overlaying and unknown filter gravity drainage system at the base of the landfill

Resolution: The GAI Consultants 1997 closure plan indicates that the geo-synthetic liner underlying the landfill is a 20 mil high density polyethylene (HDPE) liner. The 1985 GAI landfill design drawings show the details of the drainage system installed beneath the geo-synthetic liner to collect and transport any water that was to be “squeezed” from the underlying ash due to future consolidation from the landfill to perimeter ditches that ultimately drained to the sedimentation pond. Golder Associates has been contracted to produce the current Closure Plan and associated closure documents for the ash landfill. As part of the plan, Golder has designed a leachate collection system to be installed around the perimeter of the landfill, just inside and below the existing inner perimeter dike. Details of this system are shown on the Closure Plan drawings located in the DVP Coal Ash E-Room. Details of the original geo-synthetic base liner and drainage system are shown on the GAI drawings also located in the E-Room.

CHESTERFIELD POWER STATION

Item #20: Evaluation of soft organic foundation layer underlying Upper Ash Pond

Resolution: Historical shear failures of the Henricus Access Roadway (at the toe of the north dike) and downstream of the outfall area (beyond the south dike) occurred in the mid 1980’s to early 1990’s as documented by the many reports in the DVP Coal Ash E-Room. It was determined that both failures involved the presence of soft organic soils beneath the areas of failure combined with elevated water levels in the pond from periodic wet dredging operations. Geotechnical investigations performed after these failures confirmed that there were no organic soils directly under the main dam embankments. At the north dike, repairs were made to the Henricus Roadway and relief wells were installed to prevent water levels from reaching critical elevations that triggered the roadway instability.

Eventually, periodic dredging (and associated elevated water levels) ceased and the current dry closure placement of ash at the upper pond commenced. The sedimentation pond at the east end of the facility was lined with clay as a precaution, so that the area to the north would not be influenced. There has been no instability of the roadway or the area south of the outfall since Dominion stopped wet dredging ash to the pond and converted to the current dry closure placement of ash. These areas are observed for any signs of additional movement during periodic inspections. The Closure Plan for the facility prepared by GAI Consultants included stability analyses that included cross sections through these areas and results indicated adequate factors of safety.

Item #21: Evaluation of potential failure modes related to public water line running along northern embankment of Upper Ash Pond

Resolution: The September 2010 inspection report by EPA consultant O'Brien and Gere (received final report from US EPA January 2011) indicated that Dominion should include observation of the toe of the north dike for potential leakage/seepage from the buried water supply line for Henricus during its quarterly and annual inspections. In August 2010 it was verified that there are several isolation valves in the line that is located along the north dike toe. In the unlikely event of a leak, the line could be isolated to prevent further leakage. In addition, informal internal discussions were had about any potential failure modes and it was determined that the line is only a couple feet deep and buried in the shoulder of the access road at the toe of the dike. It was determined that between periodic formal observations, more frequent operations "drive-arounds", the presence of isolation valves, and the location of the line, the pipeline did not pose any significant risk for safety of the north embankment

POSSUM POINT POWER STATION

Item #24: Status of repair project at Pond ABC

Resolution: Schnabel Engineering performed a geotechnical investigation and stability analysis of the pond ABC embankment in 2014. In its current configuration, the downstream slope of the embankment meets the minimum factor of safety criteria ($F.S._{min.} = 1.5$) required by the Virginia DCR Impounding Structure Regulations. It has been determined that there are several low spots along the embankment and in one location at pond A, the embankment crest has been historically overtopped, causing some crest erosion. Dominion installed sandbags at three locations to temporarily raise the low sections and filled in the observed erosion at pond A with aggregate. Schnabel Engineering has prepared design and construction documents to permanently establish a consistent crest grade, fix the eroded area of the embankment at pond A, remove trees from the downstream slope of the dam, and regrade the downstream slope. This work will be combined with the formal closure of the pond. GAI Consultants has been contracted to prepare design and construction documents for the closure of pond ABC. Their Scope of Work includes requirements to incorporate the Schnabel design for embankment improvements into the closure. The Engineer of Record (GAI) will be required to certify that the closure project (including the embankment improvements) has been constructed in accordance with the design documents.

Item #25: Evaluation of surficial failure at upstream embankment of Pond E

Resolution: After a heavy rainfall (15 inches in 24 hours) in 2011, a shallow surficial slough was observed above the water level on the upstream slope of the pond E embankment. There is a similar slough of the surface cover material above the clay liner on the upstream slope of pond D. These sloughs have been observed by Power Generation Engineering (PGE) dam safety engineers and determined to be of no consequence to the stability of the overall embankments and the integrity of the ponds. These areas are observed in quarterly inspections by the Station Environmental coordinator and by the PGE dam safety engineers during their annual inspection and any changes are documented. Both these ponds will be undergoing closure and the embankments will either be

reconfigured (pond D) or removed (pond E). It is Dominion's opinion that adequate and prudent measures are being exercised to observe and evaluate any stability implications to the structures.

Item #26: Evaluation of potential soft organic soil underneath pond E embankment

Resolution: Schnabel Engineering performed a geotechnical investigation and stability analysis of the pond E embankment in April 2011. Boring B-02 encountered an eight foot thick layer of organic clay beneath the dike fill materials and over-excavated and replaced materials. It appears that only a portion of these soft soils were removed during original construction. Schnabel performed stability analyses of the embankment at this cross section and the minimum factor of safety (1.8) determined was for a shallower slope failure surface. Deeper failure surfaces through the clay had higher factors of safety. With regard to closure, GAI Consultants is performing the closure design for ash pond E. All ash in the pond will be removed and the entire area regraded to provide for overland storm water run-off. The existing embankment in the area of Boring B-02 will be excavated 25 feet +/- based on preliminary grading plans prepared by GAI. There will no longer be an impoundment upon closure. The 2011 Schnabel geotechnical report is located in the DVP Coal Ash E-Room. The preliminary closure grading plan will be placed in the room upon receiving formal 30% design drawings from GAI by the end of April.

Item #27: Evaluation of pond E toe drain that fills with silt and debris

The area immediately downstream of the south embankment of pond E is very flat and has very slight slope to the west. The area ponds surface run-off water and it is difficult to determine if there is any seepage in the area due to the ponded conditions. Schnabel Engineering has prepared design and construction documents to constructed shallow ditch along the toe of the south embankment to better drain the area and allow better observation of any possible seepage. Drawings were prepared in early 2014 and permits to construct were received in late 2014. Dominion has chosen to postpone any of the work and include it with the planned pond closures.

GAI Consultants has been contracted to prepare design and construction documents for the closure of pond E. Their Scope of Work includes requirements to incorporate the Schnabel design for toe area drainage improvements into the closure. All ash in the pond will be removed and the entire area regraded to provide for overland storm water run-off. The existing south embankment will be excavated up to 30 feet +/- based on preliminary grading plans prepared by GAI. The Engineer of Record (GAI) will be required to certify that the closure project (including the drainage improvements) has been constructed in accordance with the design documents. The preliminary closure grading plan will be placed in the room upon receiving formal 30% design drawings from GAI by the end of April.